

An Impedance Spectroscopic Study on Membrane-Electrode Assemblies (MEAs) Based on Newly Prepared Polymers for Polymer Electrolyte Membrane Fuel Cells

박진수*, Palanichamy Krishnan¹, 윤영기¹, 양태현¹, 이원용¹,

김창수¹

한국에너지기술연구원 고분자연료전지연구단;

¹한국에너지기술연구원

(park@kier.re.kr*)

In this study, impedance spectra of various membrane-electrode assemblies (MEAs) fabricated by newly prepared polymer electrolyte membranes and ionomer binders were investigated for the polymer electrolyte membrane fuel cells (PEMFCs). The equivalent circuits were developed to characterize the MEAs. The impedance spectra were fitted using the employed equivalent circuits and were qualitatively and quantitatively analysed in terms of conductive and capacitive properties. As a result, the interfacial compatibility and impedance spectroscopic characteristics of each component in MEAs were evaluated.